

## CLAIMS:

1. A multichannel audio signal processing device provided with signal supply means for supplying coded audio signals through several input channels and for each input channel through separate sub-channels which cover distinct frequency sub-band domains, and provided with one or several synthesis or reconstruction filters (SFB) for decoding and synthesizing audio signals over the total frequency domain covered by the sub-band domains, characterized in that sub-band combination circuits are present, each sub-band combination circuit being supplied with audio signals through respective input channels which lie in one and the same sub-band frequency domain, while the output signals of a sub-band combination circuit covering an associated frequency sub-domain are supplied to a synthesis filter.

2. A multichannel audio signal processing device as claimed in claim 1, characterized in that filter means are provided upstream of the synthesis filters as seen in the signal transport direction.

3. A multichannel audio signal processing device as claimed in claim 1 or 2, characterized in that filter means are included in the connection between the relevant sub-band combination circuits and a synthesis filter.

4. A multichannel audio signal processing device as claimed in claim 1 or 2, characterized in that filter means are included in the input sub-channels.

5. A multichannel audio signal processing device as claimed in claim 4, characterized in that the filter means are formed by elements which introduce a scale factor.

6. A multichannel audio signal processing device as claimed in any one of the claims 2 to 5, characterized in that the filter means comprise filters for obtaining a desired virtual spatial widening from which the audio signals can be heard through separate reproduction channels.

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8. Method for processing an audio signal comprising the steps:
  - receiving coded audio signals in different frequency subtend areas,
  - decoding and synthesizing the audio signals
  - combining the different signals for each subtend.